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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/525,713
Filing Date: August 29, 2005
Appellant(s): HEISELE ET AL.

Russell W. Warnock
BSH Home Appliances Corporation
New Bern, NC 28562
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/30/08 appealing from the Office action mailed 11/27/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

| | | |
|------------|------------|---------|
| EP 376,382 | Ohe et al. | 7-1990 |
| 4,420,005 | Armstrong | 12-1983 |
| 6,034,349 | Ota | 3-2000 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohe et al. (EP 376682A1).

Ohe et al. discloses a holding fixture (2) (tube retainer) and a laser beam-irradiating portion (3) are provided on the distal end of an optical fiber (6) for focusing the beam. Holes (5) are formed in the tube using laser irradiation.

Ohe et al. does not teach the spray arm of a dishwasher.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the tubing in a dishwasher or any device requiring a drilled tube as taught by Ohe et al. because it is merely an application of the device.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claims 4 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong (USPN 4,420,005) in view of Ohe et al.

Armstrong discloses a dishwasher having rotatable spray arms. Holes are present in the spray arms (14). These holes are drilled in the arms.

Armstrong does not teach the type of drilling used to form the holes in the spray arms.

Ohe et al. discloses a holding fixture (2) (tube retainer) and a laser beam-irradiating portion (3) are provided on the distal end of an optical fiber (6) for focusing the beam. Holes (5) are formed in the tube using laser irradiation.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a laser to form holes, as taught by Ohe et al. in the Armstrong system because the holes can be very small which increases the water pressure and enhances the cleaning of the dishes.

The type of materials (blow molding plastic) chosen are a choice in design and substitutions of known equivalent structures may be made. In re Kuhle 188 USPQ (CCPA 1975), In re Ruff 118 USPQ 343 (CCPA 1958).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong and Ohe et al., as stated above and further in view of Ota (USPN 6,034,349).

Armstrong and Ohe et al. do not disclose the shaping of the holes.

Ota discloses laser machining forming holes with desired shapes and sizes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to form different shapes as taught by Ota in the Armstrong system because tailored holes can direct the water such that cleaning action of the dishwasher is optimized.

(10) Response to Argument

For clarity the examiner has decided to map applicant's arguments with the arrangement of the rejection. Hence, responses to applicant's arguments will follow the order of the rejection.

ARGUMENT I:

Appellant's argument (c): Whether claim 6 is unpatentable under 35 USC 103(a) over Ohe et al. (EP 376,682)

Appellant argues that Ohe et al. does not teach nor suggest a device for producing nozzle-type openings in spray arms for dishwasher machines that include a device for releasably securing the spray arm blank in a fixed position, and a laser disposed relative to the arranged on the device for releasably securing the spray arm in a fixed position, with the laser being operable to remove material on the surface of a spray arm blank secured in the fixed position so as to form nozzle-type openings in the spray arm blank.

In response to appellant's arguments, the recitation "dishwasher machines" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

The examiner respectfully disagrees with Appellant's arguments because Ohe et al. discloses the laser drilling of a synthetic tube, as follows:

the present invention related to a method and an apparatus for manufacturing a tube having holes, for instance, which is suitable for use in irrigation or sprinkling. (Ohe et al. col. 1, lines 1-4)

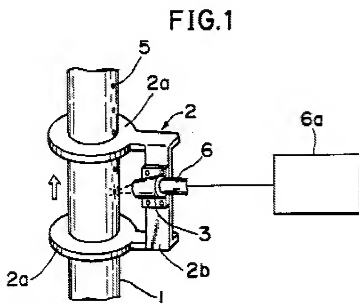


Figure 1 (Ohe et al.)

Synthetic resin tube (1)

Retainer (2)

Retainer rings (2a)

Retainer base (2b)

Laser beam irradiating portion (3) mounted onto the retainer base (2b)

Laser beam fiber optic delivery (6)

Laser beam generating device (6a)

Drilled holes (5)

Tube is conveyed in the arrow direction

Ohe et al. figure 1 shows a synthetic resin tube (1) which is held in a tube retainer (2) having ring members (2a). The tube retainer retains the synthetic resin tube in a tubular state and the tube is conveyed in its longitudinal direction (see left hand side arrow) in a tubular state. It is the position of the examiner that the retainer meets appellant's claim limitation of *securing* the spray arm blank (i.e. a plastic tube) and the conveyance of the tube through the retainer meets the claim limitation of *releasably*.

The laser beam fiber optic delivery (6) mounted on the retainer base (2b) which is part of the retainer (2) for the tube (1); drills holes (5) in the tube (1). It is the position of the examiner that the aforementioned apparatus meets appellant's claim limitations of: *device for releasably securing the spray arm blank in a fixed position, and a laser*

disposed relative to the arranged on the device for releasably securing the spray arm in a fixed position. In addition, it is obvious that the laser *removes material* when a hole is formed and that the holes meet the limitation of *nozzle-type openings*.

ARGUMENT II:

Appellant's argument (a) whether claims 4 & 7 are unpatentable under 35 USC 103 (a) over Armstrong in view of Ohe et al.

Appellant argues that neither Armstrong nor Ohe et al. either alone or in combination, teaches or suggests the feature of the claimed invention recited in claim 4, including a method for producing nozzle-type openings in spray arms for dishwasher machines that includes removing, via laser, material on the surface of a spray arm blank after the spray arm blank has been produced so as to form nozzle type openings in the spray arm blank.

The examiner respectfully disagrees because Ohe et al. discloses: a laser which drills holes in a synthetic resin tube (spray arm blank), i.e. removing material from the tube. In addition the tube is manufactured immediately prior to laser drilling, as follows:

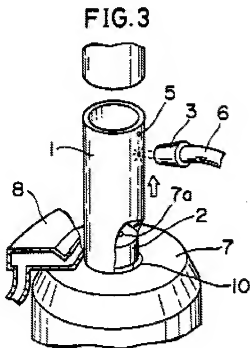


Figure 3: Ohe et al.

Synthetic tube (1)

Laser irradiation (3)

Drilled holes (5)

Die (7)

Die nozzle (10)

Air inlet (7a)

Ohe et al. discloses the synthetic tube (1) being forced through a die (7) with a ring shaped nozzle (10). The laser drilling apparatus is positioned near the tube molding machine so as to receive and retain the tube continuously forced out of the tube molding machine (Ohe et al. col. 3, lines 42-45).

The limitation "dishwasher machines" is in the preamble; however, if the limitation warranted some consideration in the method claims, it would be rejected in view of the following: Armstrong teaches a dishwasher machine having spray arms with drilled holes. Armstrong discloses:

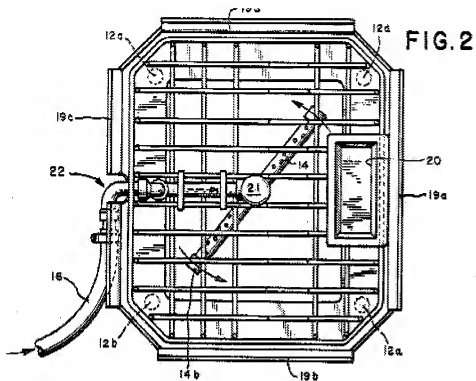


Figure 2: Armstrong

Hose (16) leads from a water faucet to the rotatable spray arm (14).

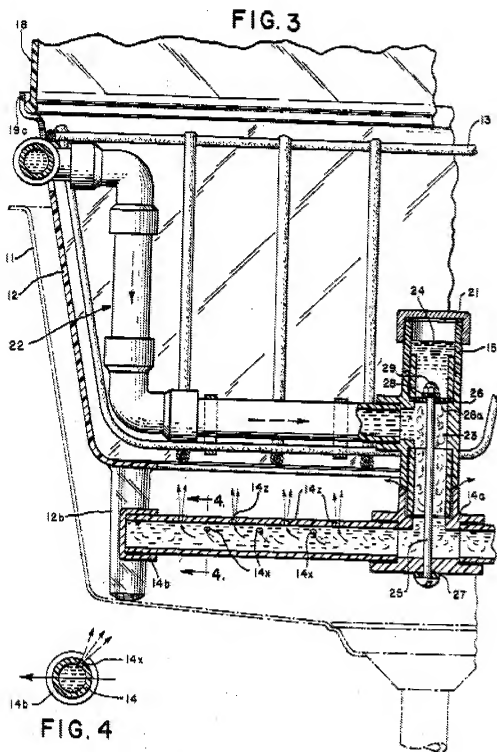


Figure 3: Armstrong

...Arm 14 is made of plastic tubing and includes a T-shaped central hub 14a and two cylindrical end caps 14b. Two series of holes are drilled in the two pieces of plastic tubing of arm 14. The first series designated as holes 14x in FIGS. 3 and 4 are so located on arm 14 that the reaction pressure of the water jets from holes 14x will cause a rapid rotation of spray arm 14. (Armstrong col. 2, lines 41-47)

Armstrong's dishwasher machine has spray arms with drilled holes, however exactly what technique is used to produce the holes is not taught. Ohe et al. discloses laser drilling holes in a synthetic resin tube much the same as Armstrong spray arm plastic tubing.

Additionally, appellant argues neither Armstrong nor Ohe et al. either alone or in combination, teaches or suggests the features of the claimed invention recited in claim 7, the method of the claimed invention including blow-molding a plastic spray arm blank, and cutting a nozzle that is sharp-edged to create a constriction of a stream passing through the opening. The examiner respectfully disagrees because Ohe et al. discloses: (see figure 3 Ohe et al.) that **air may be blown into the tube** from an air inlet (7a) provided in the distal end of the die (7). The air blown into the molded tube meets appellant's claim limitations of blow molding. Additionally, laser cutting of a hole implicitly creates a sharp edged opening/hole. Lastly, pressure in a spray arm, it is well known in the art and is specifically taught by Armstrong, that is,

The first series designated as holes 14x in FIGS. 3 and 4 are so located on arm 14 that the reaction pressure of the water jets from holes 14x will cause a rapid rotation of spray arm 14. (Armstrong col. 2, lines 43-47)

ARGUMENT III:

Appellant's argument (b) whether claim 5 is unpatentable under 35 USC 103 (a) over Armstrong, Ohe et al. and Ota.

Appellant argues that none of Armstrong, Ohe et al. or Ota either alone or in combination, teaches or suggests the features of the claimed invention recited in claim 5 of the present invention including the steps of the method recited in claim 4 of the present application wherein the step of removing, via laser, material on the surface of the spray arm blank includes removing material so as to form nozzle-type openings having shapes deviating from a circular shape.

The examiner respectfully notes that the steps of the method recited in claim 4 have been considered and rebutted in the above argument II section. Furthermore, claim 5, depending from claim 4, have the further limitation of the laser removal forming nozzle-type openings which have shapes that deviate from a circular shape. This limitation is meant by Ota in combination with Armstrong and Ohe et al. As stated above Ohe et al. teaches laser drilling (i.e. laser removal of material) yielding holes in a synthetic resin tube (i.e. spray arm blank) and Armstrong teaches a dishwasher machine having a plastic spray arm with drilling holes. Ohe et al. and Armstrong teach holes, but do not specifically teach the shape of the holes. Although it should be noted that these holes would implicitly be circular in shape given the nature of unaltered laser light spot. Ota discloses: drilling and cutting of polymer materials using lasers.

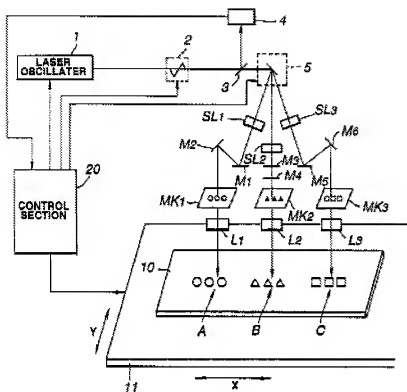


Figure 1: Ota

Figure 1 of Ota depicts the laser machining system which bores holes in a polymer, ceramic or composite workpiece (10). The laser light irradiates a plurality of different machining spots (in this case machining spots A, B & C). These spots may be various shapes and sizes and are laser drilled (i.e. laser removal of material). (col. 1, lines 7-9, col. 3, lines 13-17, 34-37, col. 6, lines 18, 53-55. col. 7, line 45) Thus Ota discloses that a laser may be used to form a variety of shapes (i.e. alter the shape of the laser light spot) and this would obviously included appellant's claim limitation of a hole deviating from circularity.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/M. Alexandra Elve/

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